



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

$+70=0$ by p , $p^4-39s^2=-70p$. Adding to both sides $25p^2+49$, we have $p^4-14p^2+49=25p^2-70p+49$, whence $p^2-7=\pm(5p-7)$ and $p=2, 5$, or -7 ; hence $s=6, -4\frac{1}{2}$, or 18 . [Or, from $p^3-39p+70=0$, we have $(p-5)(p^2+5p-14)=0$. $\therefore p=5, 2$, or $-7, s=6, -4\frac{1}{2}$, or 18 .]

$\therefore x+y=5, xy=6, \therefore x=3$ or $2, y=2$ or 3 .

$x+y=2, xy=-4\frac{1}{2}, \therefore x=\frac{1}{2}(2\pm\sqrt{22}), y=\frac{1}{2}(2\pm\sqrt{22})$.

$x+y=-7, xy=18, \therefore x=\frac{1}{2}(-7\pm\sqrt{-23}), y=\frac{1}{2}(-7\pm\sqrt{-23})$.

\therefore There are six values for x and six values for y admissible.

III. Comment by H. W. DRAUGHON, Olio, Mississippi.

The problem can not be solved by quadratics as may be shown thus: The resulting literal equation $p^3-3ap+2b=0$ can not be solved by quadratics, and therefore the given equations can not be solved by quadratics. Cubics of this class can be *apparently* solved by quadratics, when they have one commensurable root. Let r be one root of the equation $p^3=3ap-2b$, for instance. Subtracting r^2p from both members gives $p^3-r^2p=(3a-r^2)p-2b$. Obviously both members of this equation can be divided exactly by $p-r$, giving a quadratic equation, but before this subtraction can be made we must find r , which can not be done by quadratics. If we substitute the definite values for a and b we readily complete the solution.

Also solved by A. H. Bell, P. S. Berg, D. G. Durrance, Jr., H. W. Draughon, F. P. Matz, G. B. M. Zerr, J. F. W. Scheffer, C. D. Schmitt, and H. C. Wilkes.

PROBLEMS.

50. Proposed by LEONARD E. DICKSON, M. A., Fellow in Mathematics, University of Chicago.

Given $b=a\sqrt{-1} \tan \frac{m\pi}{n}$, m being an arbitrary integer, find the simplest *real* relation between a and b .

51. Proposed by J. W. NICHOLSON, LL. D., President and Professor of Mathematics, Louisiana State University and A. and M. College, Baton Rouge, Louisiana.

Solve the equation $x^5+5mx^3+5m^2x+n=0$.